



US008834565B2

(12) **United States Patent**
Ben Nun

(10) **Patent No.:** **US 8,834,565 B2**
(45) **Date of Patent:** **Sep. 16, 2014**

(54) **FOLDABLE ACCOMMODATING
INTRAOCULAR LENS**

(75) Inventor: **Joshua Ben Nun, D.N. Vitkin (IL)**

(73) Assignee: **Nulens Ltd., Herzliya Pituah (IL)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 189 days.

(21) Appl. No.: **13/604,172**

(22) Filed: **Sep. 5, 2012**

(65) **Prior Publication Data**

US 2013/0018461 A1 Jan. 17, 2013

Related U.S. Application Data

(63) Continuation of application No. 11/910,133, filed as application No. PCT/IL2006/000406 on Mar. 30, 2006, now abandoned.

(60) Provisional application No. 60/666,180, filed on Mar. 30, 2005, provisional application No. 60/672,081, filed on Apr. 18, 2005, provisional application No. 60/724,896, filed on Oct. 11, 2005.

(51) **Int. Cl.**
A61F 2/16 (2006.01)

(52) **U.S. Cl.**
USPC **623/6.22**

(58) **Field of Classification Search**
USPC 623/6.13, 6.18, 6.21, 6.22, 6.37-6.47
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,950,082 A 4/1976 Volk
4,122,556 A 10/1978 Poler

4,254,509 A	3/1981	Tennant
4,298,994 A	11/1981	Clayman
4,340,979 A	7/1982	Kelman
4,409,690 A	10/1983	Gess
4,409,691 A	10/1983	Levy
4,445,998 A	5/1984	Kanda et al.
4,446,581 A	5/1984	Blake
4,494,254 A	1/1985	Lopez
4,530,117 A	7/1985	Kelman
RE31,963 E	8/1985	Kelman
4,556,998 A	12/1985	Siepsner
4,575,374 A	3/1986	Anis
4,581,033 A	4/1986	Callahan
4,589,147 A	5/1986	Nevyas
4,591,358 A	5/1986	Kelman

(Continued)

FOREIGN PATENT DOCUMENTS

EP	0 156 472 A	10/1985
EP	0 637 503 B1	10/1999

(Continued)

OTHER PUBLICATIONS

Chu, Ralph Y. and Buliano, Megan, Accommodating IOLS by Ralph Chu et al, Cataract & Refractive Surgery Today, May 2004.

(Continued)

Primary Examiner — William H. Matthews

(74) *Attorney, Agent, or Firm* — Morgan, Lewis & Bockius LLP

(57) **ABSTRACT**

A foldable accommodating intraocular lens (AIOL) for implantation in a human eye, the AIOL including a hollow flattened sphere shaped housing including a shape memory optical element and a tubular casing mounted on the housing for reciprocation relative thereto for selectively compressing the shape memory optical element between a non-compressed shape and a compressed shape whereby the AIOL has a continuously variable Diopter strength.

15 Claims, 16 Drawing Sheets

